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ABSTRACT

A study investigated the perceptions of the work environment among 4,981 permanent non-instructional staff at a midwestern research university, to determine whether union and non-union workers have significantly different perceptions. The survey instrument consisted of 190 items representing 13 categories of quality work environment, and two open-ended questions. The most common group of comments by both groups concerned lack of leadership skills on the supervisor's part. About half of each group found co-workers supportive and good to work with. Union members were more likely than non-union members to see a lack of teamwork or cohesiveness within the immediate work unit. However, more non-union staff saw a fear of change in the work setting, with perpetuation of the status quo. Overall, it is concluded that union-affiliated staff perceived the culture, philosophy, climate, and outcomes of their work environment more negatively than non-union staff. A 49-item bibliography is included and some data analyses are appended. (MSE)

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Comparing Union and Non-Union Staff Perceptions of the Higher Education Work Environment

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Jean Endo
Editor
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Abstract

Evidence of substantial growth in unionization among university non-instructional staff over the past 20 years (Hurd and Woodhead, 1987) and the emergence of a quality movement in higher education linking employee attitudes toward the work environment with increased productivity point to the need for additional research into union and non-union staff perceptions of the work environment. This paper describes a conceptually- oriented, exploratory study of the university work environment as perceived and defined by union and non-union non-instructional staff.

INTRODUCTION

Public sector union participation expanded rapidly between 1960 and 1976 (Edwards, 1989), but was followed by twenty years of little growth. In 1994, the Bureau of Labor Statistics (U.S. Department of Labor, 1994) estimated that approximately 16.7 million wage and salary employees, 15.5 percent of total U.S. employment, were union members. Of this total number of employees, 7.1 million worked in federal, state, and local government, where they constituted 38.7 percent of employment. In addition, another 1 million public sector workers were represented at their workplace by a union, though not union members themselves.

While blue-collar employees in higher education have been organized for decades (Becker, 1990), in recent years union activity has spread to other groups of workers including clerical and technical employees. In 1983, clerical and technical employees at Yale University, Adelphi University, and the University of Cincinnati, as well as clerical workers in universities throughout Iowa and the University of California system became union-affiliated. In 1988, lab technicians and clerical and medical school employees voted to organize at Harvard University. Indeed, one estimate has identified 40 percent of the clerical workforce in public institutions and 25 percent of the clerical workforce at private institutions as union-affiliated (Becker, 1990).

Smith and Hopkins (1979) analyzed the essential nature of labor unions and identified that they are often organized to address shortcomings in the work setting. Furthermore, once an employee joins a union, the prominence and importance of these shortcomings may exacerbate the employee's perceptions of the work environment (Johnson & Johnson, 1995). The basic premise of this study is that a problem-focused approach to viewing the work environment may influence non-instructional staff perceptions of that environment, and foster differences in perceptions between union and non-union staff. As a result, the purpose of this paper is to explore union and non-union non-instructional staff perceptions of the higher education work environment.

LITERATURE

Three bodies of literature provide background and context for this study: (a) the concept of "work environment", particularly as it applies to the higher education context; (b) the work environment of non-instructional staff in higher education; and, (c) the effects of union membership or affiliation on perceptions of the work environment.

The Work Environment

The concept of a work environment is critical to understanding the various influences on employee performance and improving the work environment. This concept also provides members with an understanding of the meaning of their organization and their internal work environment (Peterson, Cameron, Jones, Mets, & Ettington, 1986; Peterson & Spencer, 1990), and can also provide a framework within which an organization's employees make sense of the nonrational and informal aspects of their institutional environment (Peterson & Spencer, 1990).

There are several ways to conceptualize an organization's work environment: 1) as objective patterns of behavior or working conditions; 2) as the perceived patterns of behavior and attitudes related to that environment; or 3) as the underlying values and beliefs of the organization or its participants (Peterson, Cameron, Julia, Winn, Spencer & Vander Putten, 1994). These conceptualizations of work environment can be understood as comprising the organization's culture or climate.

Organizational culture has been defined as "the basic assumptions and beliefs that are shared by the organization" (Schein, 1985) and as "being comprised of shared values, beliefs, and principles" (Dennison, 1990). Observers of "culture" in the higher education context have described it as the "organizational glue" that holds the institution together (Peterson & Spencer, 1990) and as "the collective values held by members of the organization [which] derive [their] force from the traditions, processes, and goals held by those most intimately involved in the organization's working" (Chaffee & Tierney, 1988, p. 5). In higher education, these collective values are inherent in the institution's

history, tradition, academic mission, governance processes, administrative methods, and delivery processes (Austin, 1990; Chaffee & Tierney, 1988; Keller, 1983; Peterson & Spencer, 1990).

Studies of "climate" in higher education institutions have described it as the "current, common patterns of important dimensions of organizational life or its members' perceptions of and attitudes toward them" (Peterson, Cameron, Jones et al, 1986). Similarly, Schneider and Rentsch (1988) defined institutional climate as the organizational policies, practices, and procedures that communicate the goals that are important to an organization and that create a sense of institutional imperative. Finally, an important distinction between climate and culture has been drawn by Peterson and Spencer (1990) who identified the former as referring to organizational "atmosphere" and the latter to organizational "values".

Thus, organizational culture and climate, understood as comprising the broader concept of a work environment, are both said to exert powerful influences on the ways in which organizational members perceive their work environment.

Non-Instructional Staff and the Higher Education Work Environment

Although non-instructional staff have received little attention in the scholarly literature, several studies found important differences between administrator and faculty perceptions of their institutions (Austin & Gamson, 1983; Blackburn, Pitney, Lawrence, & Trautvetter, 1989; Blackburn, Lawrence, Hart, & Dickman, 1990; Bowen & Schuster, 1986; Peterson & White, 1992). In one multiple institution study, Birnbaum (1987) used qualitative methods of inquiry to study senior administrators and faculty at 32 institutions. Looking at one institution, Blackburn, Lawrence, Hart, and Dickman (1990) found that administrators and faculty at the same institution held different perceptions of the work environment. More recently, Blackburn and Lawrence (1995) studied administrative and faculty views of the workplace using national surveys, and

confirmed that these two groups "often judge the quality of the work environment quite differently." (p. 241)

All of these studies, however, have focused on perceptions of the work environment among administrative staff. A recent study by Barrett, Vander Putten, Peterson, and Cameron (1995) content analyzed non-instructional staff comments regarding the higher education work environment, and identified six broad themes that emerged from the data; Compensation issues, Quality Concerns, Physical Environment, General Work Environment, Personal Work Experience, and Staff Development Opportunities. Of the 3700 comments provided by the respondents, the two most frequently mentioned content categories were Personal Work Experience and General Work Environment.

Personal and organizational dimensions can significantly influence how individuals perceive their work environment. Among the personal or individual characteristics that have been considered are gender, age, ethnicity, level of education (including participation in professional development activities), and years in their current position and at their institution (Asplund, 1988; Austin & Gamson, 1983; Jones & James, 1979; Lawrence, 1985). Organizational variables include the structure of work, work processes, communication, and perceived leadership and support (Senge, 1990; Sherr, 1990; Deming, 1986). These can influence and shape the ways in which individuals perceive their work environment so that what one person may identify as being a positive factor in the work environment, another may interpret as a negative. These perceptions help to form individuals' perceptions of organizational culture and climate.

The Effects of Union Membership on the Work Environment

Although almost no research has been conducted that compares union and non-union staff employees' perceptions of the higher education work environment, two separate bodies of literature exist that help generate a set of hypotheses regarding

possible differences in the perceptions of the work environment among union and non-union non-instructional staff. One area of research that may provide insights into the relationship between union status and perceptions of the work environment can be found in the faculty unionization/collective bargaining literature, especially those studies focusing on the individual- and organizational-level effects of faculty unionization.

For example, Birnbaum (1974) found that increases in faculty compensation were significantly greater in institutions engaged in collective bargaining than at non-unionized colleges and universities, a conclusion supported by the research of Morgan and Kearney (1977) and Guthrie-Morse, et al (1981). In a separate study, Birnbaum (1980) suggested that because collective bargaining usually occurs under conflictive conditions, a unionized faculty environment commonly leads to various forms of defensive behavior including impaired communication and misrepresentation of individual motives, values, and emotions. Baldridge (1978) argued that unions themselves generate concentrated control, bureaucratic red tape, procedural regularity and procedural restrictions. Richardson and Mortimer (1978) found decreases in innovation at unionized colleges, while Gilmore (1981) reported a change from collegial to adversarial relationships between unionized faculty and administration.

Extensive research has been conducted on union membership in business and industry, and has addressed a variety of topics including the impact of union status on job satisfaction (Gordon & DeNisi, 1995), work attitudes (Boothe & Lincoln, 1993), level of commitment to employer (Gallagher & Conlon, 1987), and level of attachment to union and productivity (Meador & Walters, 1994). In addition, research that compares union and non-union employees has investigated attitudes toward union representation (Hills, 1985), work values among professional employees (Hovekamp, 1994), the perceived role of unions (Keegan, 1987), and support for worker participation (Olson & Fenwick, 1986), among others. This literature helps inform an understanding of the

possible affect of union affiliation on employees' perceptions of the work environment. Hovekamp (1994), for example, found no significant differences in the work values of union and non-union professional librarians. In a survey of several major industrial sectors, Sanchez and Juetten (1988) found significant differences between union and non-union members regarding satisfaction with salary issues.

Despite this rather well-developed body of literature addressing the influence of union membership on employee attitudes in business and industry, very little research has been conducted that compares union and non-union employees' perceptions of the higher education work environment. Evidence of substantial growth in unionization among university non-instructional staff over the past 20 years (Hurd & Woodhead, 1987) and the emergence of a quality movement in higher education linking employee attitudes toward the work environment with increased productivity point to the need for additional research into union and non-union staff perceptions of the work environment.

CONCEPTUAL FRAMEWORK

The preceding literature review identifies numerous possible influences of staff members' perceptions of the work environment. The effect of Union/Non-Union status is examined in this study as the primary variable. While the central focus of this study involves the relationship between union affiliation and staff perceptions of the work environment, other variables have also been included. The independent variables in this study, depicted in Appendix 1, are (a) Staff Members' Personal Characteristics (comprised of age, gender, race, education level) and (b) Staff Members' Organizational Status (comprised of functional unit, length of time in unit). The dependent variables in this study are ten unit, climate, philosophy, improvement, and outcomes measures that represent the construct of a Work Environment.

RESEARCH QUESTION

The literature on individual- and organizational-level effects of union affiliation on faculty and industrial work environments suggests the following primary research question, which serves to direct this study:

Do union and non-union university non-instructional staff members have significantly different perceptions of the work environment?

METHODOLOGY

Data Source

This paper draws upon the results of a study of non-instructional staff members' work environment perceptions conducted during 1993-94. Informed by an extensive review of the total quality and continuous improvement literature in business and in higher education, a survey instrument was designed to measure non-instructional staff members' perceptions of their immediate work unit, with an emphasis on continuous quality improvement values, work processes, and practices.

Survey Instrument and Response Rates

The survey instrument consists of 190 items representing 13 categories of the "quality work environment", was administered to all permanent non-instructional staff members at a Midwestern research university. In addition, two open-ended questions were included in the survey to obtain respondents' perceptions of their work environment and the survey instrument itself. A total of 4,891 questionnaires were processed for a usable response rate of 47.3%. Response rates by functional area--defined as seven organizational areas clustered by their primary functional purpose within the University--ranged from 36.6% to 60%. Response rates by job type--defined as descriptive categories used to identify the primary vocational tasks undertaken by staff members--varied from 35.7% to 53.8%. Approximately 2450 survey respondents answered the open-ended question regarding the work environment.

All union-affiliated non-instructional staff at this university belong to one of four university-classified job types: service/maintenance; police/security; nursing; and operating engineers. Descriptive statistical analyses identified that 865, or 17.7%, of survey respondents are union-affiliated.

A factor analysis of the survey's thirteen conceptual categories resulted in twenty-seven factors. These items were comprised of groups of items of similar content. All questionnaire items were included in the factor on which it had the highest loading if it was above .40. These factors were then converted to indices , or sets of multiple items designed to measure the same construct, which represent the factors. Reliability tests were then conducted on each of the twenty-seven indices. Reliabilities for these indices range from .53 to .96.

Quantitative Methodology

The quantitative component of this study consisted of two processes, data reduction and data analysis. These two processes are considered in the following section.

Data Reduction

To make data analysis more manageable and to make the data results more meaningful, a data reduction process was performed. Out of the original set of twenty-seven indices resulting from the factor analysis discussed above, ten were selected to comprise this study's "work environment" construct. The ten indices were chosen for the analysis on the basis of their high alpha reliabilities and their conceptual distinctiveness from one another. Table 1 displays the ten work environment indices including the number of survey items contained in each index along with the index's alpha reliability. Appendix 2 contains a description of each of the ten indices.

Quantitative Analysis Methodology

At the core of this study is the relationship between union affiliation and non-instructional staff members' perceptions of their work environment. This relationship is

studied relative to six other variables that may also influence staff members' perceptions of the work environment; age, race, gender, educational level organizational unit and tenure in unit. If a relationship exists between any one of the six independent variables and either the union/non-union variable or the ten dependent variables, then that one independent variables' influence must be considered in the analysis. However, if no relationship is found to exist between an independent variable and either the union/non-union variable or the dependent variables, then the respective independent variable may be removed from further analysis. These considerations provide a logical sequence of steps for the data analysis.

1. *Relationship of personal characteristics and unit status to union affiliation* -- An analysis of the relationship of the four personal characteristic variables and the two unit status variables to union affiliation was conducted to determine which, if any, of these independent variables should be considered in further analyses. Because three of these six independent variables consisted of both nominal-scale and ordinal-scale data, chi-square and t-tests were used. Results of these tests are presented in Table 2. There were significant differences between union and non-union staff members on three of the four personal characteristic variables--gender, race and education level--and on one of the two unit status variables--functional area. All differences between union and non-union staff members on these four independent variables were significant at the .001 level.

2. *Relationship of personal characteristics to staff members' perceptions of the work environment* -- One-way analysis of variance and correlations were used to test the relationship of the four personal characteristic variables to staff members' perceptions of the work environment. The results of this analysis are presented in Table 3. The relationship between the age and race variables and staff perceptions of the work environment are striking. On nine of the ten dependent variables, staff perceptions differed significantly according to age of the respondent. Similarly, staff perceptions of

their work environment also differed significantly according to race of the respondent for seven of ten quality indices.

3. *Relationship of unit status to staff members' perceptions of the work environment* -- The next step of the analysis was to test the relationship of the second set of independent variables--consisting of the unit status variables, organizational unit and tenure in unit--to the ten dependent work environment perception variables. One-way analysis of variance and correlation was used to test this relationship. The results are displayed in Table 4. While little relationship was found between unit tenure and staff perceptions of the work environment, organizational unit was found to have a significant relationship with nine of the ten dependent variables.

4. *Relationship of union affiliation to staff perceptions of the work environment, controlling for the influence of personal characteristic and unit status variables* -- The final analysis was a seven-way analysis of variance. The relationships of each of the six independent variables and of union affiliation with the dependent variables were considered simultaneously. The resulting analysis is displayed in Table 5. When all seven of the independent variables were considered simultaneously, union affiliation was found to have a significant relationship with nine of the ten dependent variables. This relationship between union affiliation and perception of the work environment exists independent of other possible important sources of influence on the dependent variables, including unit status variables such as organizational unit and tenure in unit and various personal characteristics. Of particular interest is the direction of the differences in mean responses between union and non-union staff. Union- affiliated staff members perceive their unit climate more negatively than do non-union staff, and union staff are also more negative in their perceptions of the work processes within their unit. Additionally, union staff perceive their unit's performance, rate of improvement and cost of service more negatively than do their non-union colleagues.

Content Analysis Methodology

Unlike quantitative analysis methods and research designs, few writers agree on a precise procedure for data collection, analysis, and reporting of the results of qualitative research. Qualitative approaches to conducting research, including institutional research (Fetterman, 1991) take a variety of forms; interpretive, systematic, theory-driven, holistic ethnography, cognitive anthropology, and phenomenological interviewing (Attinasi, 1990), among others. In addition, qualitative researchers have research design options that can be drawn from a variety of disciplinary fields, including anthropology, psychology, social psychology, sociology, and education.

As a result, the process of data analysis is eclectic; no "one right way" exists (Tesch, 1990). It requires researchers to be open to possibilities, develop categories, make comparisons and contrasts, and see alternative explanations for the findings. External validity (generalizability of findings) is not the intent of qualitative research, but rather the intent is to form a unique interpretation of events. However, some generalizability can be identified from the broad content categories and themes that emerged from the content analysis when they are compared to the categories (dimensions) used in the fixed response section of the survey.

Creswell (1994) identified several important issues to consider when conducting qualitative research in general, and one in particular is relevant for the approach to data analysis in this study. Creswell identified that qualitative researchers are interested in meaning; how people make sense of their lives, their experiences and structures of their environment. As a reflection of this perspective, the content analysis was conducted from the non-instructional staff member's point of view, and the context of their perceptions of the work environment was used to identify categories that characterize the positive, negative, and neutral aspects of the work environment.

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Data Analysis

Two researchers used Tesch's (1990) eight step qualitative process to cluster topics and themes from the open-ended responses. They worked independently for initial coding of the data, and then worked together to complete a second review of the data for data reduction and to facilitate a shift to a conceptually oriented approach to code the data, identify coding subcategories and make subcategory coding assignments. A third review was completed to reach consensus on coding assignments. A third researcher was available for assistance in solving coding differences.

RESULTS

While Barrett et al (1995) identified six broad categories in their content analysis of the qualitative data, the 'Personal Work Experience' broad category is most relevant for this study because it focuses on individual respondents' immediate work unit. Using the 'Work Environment' component of the conceptual framework as a guide for identifying corresponding subcategories in the Personal Work Experience qualitative data, four subcategories are similar to the variables used in the quantitative analyses in Table 5.

One indication of salient qualitative perceptions of the work environment is the frequency with which respondents make comments that cluster in specific subcategories. The subcategory 'Supervisor Has Poor Leadership Skills" possessed the largest number of comments (n=159). Of those respondents who made comments that fit this subcategory, 52.8% (n=84) were union members and 47.2% (n=75) were non-union members. To illustrate this subcategory, one female unionized staff member characterized her work environment this way:

> "The work staff in my unit is very dedicated and quality oriented. But, our morale is very low because our management staff, in our view, consistently lacks in leadership & direction, and we feel we could even function in an improved way without them. The reason we function at all is in spite of the mgmt. staff."

Because the frequency of comments among union and non-union staff are similar in this subcategory, it is important to consider the views of non-union staff as well. One male non-unionized staff member described leadership in his work unit:

> "Mgmt. & leadership tends to be weak in my unit. Decisions are made "in crisis" because of inability to make decisions in planning process [sic]."

These comments provide insights into perceptions that were not directly measured in the fixed-response portion of the survey; leadership in the work environment. In addition, the frequencies of comments indicate that non-instructional staff members who are members of unions, as well as those who are not, perceive the work environment similarly in regard to this issue.

The subcategory with the second highest frequency of comments (n=107) is 'Co-Workers Are Supportive/Good to Work With,' and corresponds with the quantitative variable 'Supportive Work Processes.' Of those respondents who made comments fitting this subcategory, 50.5% (n=54) were union members and 49.5% (n=53) were non-union members. Identifying positive aspects of her work environment, one female union staff member commented:

> "It is great — It is a very positive envt. As always a few changes could perhaps make it better, but we as a whole unit get along fairly well and we do socialize during the year and get to know one another better."

In the same respect, one male non-union staff member wrote this:

> "Despite all difficulties, I am thankful for my job, I am blessed w/ good people in my unit. Overall my experience has been very good. Staff also includes AFSCME employees."

Results from ANOVAs involving the quantitative variables 'Supportive Work Processes' and 'Union Status' indicated significant differences in work environment perceptions. However, the results of the qualitative analysis contradicts this finding and indicates that union and non-union staff members perceive the work environment similarly in regard to supportive co-workers and the work process.

A second indicator of qualitatively-identified work environment perceptions focuses on discrepancies in the frequencies of union and non-union staff members' comments in a specific subcategory. One subcategory, 'Unit is Not Cohesive; Teamwork Does Not Exist', addresses another facet of the quantitative analysis variable 'Supportive Work Processes' and showed the greatest difference in frequency of comments. Of the 34 respondents who made comments in this subcategory, 64.7% (n=22) were union staff members, and 35.3% (n=12) were non-union staff members. A female non-instructional staff member who belongs to a union made this observation:

> "Work experience until recently has been pleasant — everyone really worked as a team — now we feel disconnected — worked w/o supervision & constant criticism, now treated as peons, double-standard is the norm, morale is very low & can anticipate many turnovers. I think office staff should be treated with the same dignity expected by those in charge — with the economy the way it is, everyone needs their job but we truly need more people-oriented in charge & then when people are fairly happy w/their work, watch them grow & go!"

Also describing the changing nature of the work environment from positive to negative over time, a male union staff member said:

> "My first 4 1/2 yrs. were very positive — our unit worked as a team and communicated very easily with each other. New mgmt. was brought in along with a complete turnover of personnel and teamwork and communication ceased to exist."

While Smith and Hopkins (1979) identified that labor unions often address shortcomings in the work setting, the influence of union membership on work environment perceptions expressed by union staff members is noticeably absent in comments fitting this subcategory.

The second subcategory that demonstrated a distinct discrepancy in frequencies of comments was "Fear of Change Exists; Status Quo Perpetuated." This subcategory clearly corresponds to the quantitative analysis variable 'Status Quo,' however, the pattern of mentions is opposite to that of the previous subcategory. Of the 27 comments in this subcategory, 59.3% (n=16) were made by non-union staff members, as

compared to 40.7% (n=11) by union-affiliated staff members. A male non-union staff member summarized his perceptions this way:

> "Working for the U would be more enjoyable if there were less emphasis made on bureaucratic procedures. Too many decisions are based on "well, we've always done it this way." Much of my unit's current efficiency improvements can be attributed to increased use of computers and computer networks — has made a big difference for many people. Acknowledgment of this process with encouragement to become more computer literate would be even more helpful."

Another male non-union staff member confirmed this idea:

> "I have worked in only one unit at the U for almost 15 years. It has been a stable, enjoyable (for the most part) environment. Many long-term committed individuals — slow to make changes."

Considering the emphasis that labor unions place on protecting existing numbers of jobs in organizations where they are present, it is somewhat surprising to note that non-union respondents comprised the majority in this subcategory. In comparison to the quantitative results, these findings run counter to the quantitative results, in which non-union staff members were less likely to perceive their work environment as static and unchanging.

DISCUSSION

Edwards (1989) predicted that public sector union participation will continue along a no-growth path in the future. In addition, however, a series of factors can be identified that may exert influence on future levels of unionism. First, legislative changes at the state level to grant public sector employees the right to organize and bargain collectively or strengthen existing bargaining laws, both hold the potential to facilitate growth in the number of public sector employees covered by collective bargaining agreements.

Second, privatization of higher education services as a strategy for cost reduction poses a clear threat to public sector unions. Regardless of whether actual employment shifts from the public to private sector occur, the power of public sector unions and their ability to attract new members will be reduced, and the competition from the private

sector will place pressure on higher education administrators and public sector unions managers to control costs.

Distinct implications can be identified from the results of this study. Significant differences have been found to exist between union and non-union non-instructional staff perceptions of the work environment. The quantitative analysis found that union-affiliated staff members perceive the culture, philosophy, climate, and outcomes of their work environment more negatively than do non-union staff. The qualitative analysis confirmed this finding, with the exception of the perception of a status quo work environment, in which non-union staff were more likely to hold this view.

Future research in the area of union/non-union perceptions of the work environment should consider the benefits of using multiple method research designs. Other qualitative research methods in addition to content analysis (e.g., participant-observation, ethnographic interviewing, document analysis) hold the potential to yield important data when combined with a variety of quantitative methods. As a result of using a multiple method approach, greater insights into conceptual dimensions of the higher education work environment can be gained, new theoretical models can be developed, and issues for future research can be identified. In addition, these insights can assist higher education administrators to assess the work environment for administrative action and improvement to benefit all members of the higher education community.

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Table 1: Comparsion of Dependent Variable Indices

Quality Environment Indices	No. of Items	Alpha Reliability
Culture Measures:		
1. Status Quo	6	.80
2. Error Prevention	6	.70
3. Continuous Improvement	6	.76
Philosophy Measure:		
1. Unit Philosophy	5	.81
Climate Measures:		
1. Supportive Unit Climate	15	.95
2. Supportive Work Processes	13	.94
Outcome Measures:		
1. Overall Performance	4	.84
2. Rate of Improvement	4	.90
3. No. of Errors and Mistakes	4	.89
4. Cost of Service	4	.87

Table 2. Relationship of Unit Status and Personal Characteristic Variables to Union Status

Independent Variables	Test of Significance	p
Unit Status Variables:		
1. Functional Area	chi-square	**
2. Tenure in Unit	t-test	
Personal Characteristic Variables:		
1. Age	t-test	
2. Gender	chi-square	**
3. Race	chi-square	**
4. Educational level	t-test	**

Table 3. Relationship of Personal Characteristic Variables to Quality Culture, Philosophy, Climate and Outcome Indices (One-way ANOVA and correlations)

	Personal Characteristic Variables			
	Gender	**Race**	**Age**	**Education**
Work Environment Indices	(ANOVA)		(correlation)	
Quality Culture:				
1. Status Quo	**		**	
2. Error Prevention	*		**	
3. Continuous Improvement		*	**	**
Quality Philosophy:				
1. Unit Philosophy	*	**	**	
Quality Climate:				
1. Supportive Unit Climate		**	**	**
2. Supportive Work Processes		**	**	
Quality Outcome:				
1. Overall Performance		*	**	
2. Rate of Improvement	*	**	**	*
3. No. of Errors and Mistakes	*	*		
4. Cost of Service			*	

* $p < .05$
** $p < .001$

Table 4: Relationship of Unit Status Variables to Quality Culture, Philosophy, Climate and Outcome Indices (One-way ANOVA and correlations)

	Unit Status Variables	
Work Environment Indices	Organizational Unit (ANOVA)	Tenure in Unit (correlations)
Quality Culture:		
1. Status Quo	*	
2. Error Prevention	*	
3. Continuous Improvement	**	
Quality Philosophy:		
1. Unit Philosophy	*	
Quality Climate:		
1. Supportive Unit Climate	**	**
2. Supportive Work Processes	*	*
Quality Outcome:		
1. Overall Performance	*	
2. Rate of Improvement	**	
3. No. of Errors and Mistakes	**	
4. Cost of Service		*

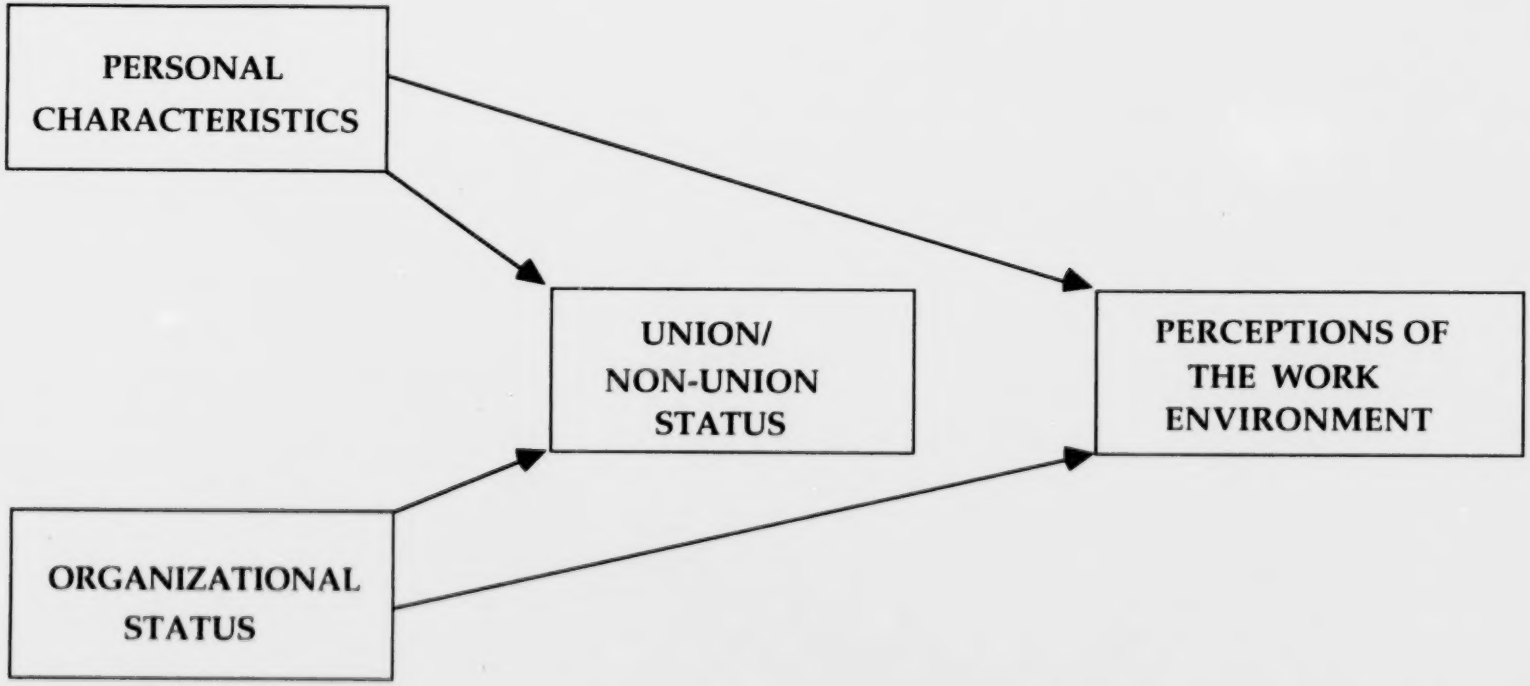
* $p < .05$
** $p < .001$

Table 5. ANOVA: Relationship of Organizational Status and Personal Characteristic Variables to Quality Culture, Philosophy, Climate and Outcome Indices

Work Environment Indices	Union Status	Org. Unit	Tenure	Educ Level	Race	Age	Gender
			Independent Variables				
Quality Culture:							
1. Status Quo	+**	**	**	*		**	
2. Error Prevention	--**	*	**			**	
3. Continuous Improvement		**	**	**	*	**	*
Quality Philosophy:							
1. Unit Philosophy	--**	*	**	*	*	**	
Quality Climate:							
1. Supportive Unit Climate	--**	**	**	*	**	**	
2. Supportive Work Processes	--**	*	**	*	**	**	
Quality Outcome:							
1. Overall Performance	--**	*	**	**	*	**	
2. Rate of Improvement	-- *	*	**	**	**	**	
3. No. of Errors and Mistakes	-- *	*			*		*
4. Cost of Service	-- *	*	*	*		*	

* $p < .05$
** $p < .001$

Conceptual Framework



Appendix 2

Description of Quality Culture, Climate, Philosophy and Outcome Indices

Quality Culture	Reliability
Status Quo: six items related to staff members' perceptions that there have been no changes in the unit improvement orientation; status quo includes staff members' perception that unit leadership has done nothing to enhance quality improvement, quality is not measured, there is no attempt to provide quality training, little thought is given to those served, no teams exist, and that approach to costs is the same as always.	.80
Error Prevention: six items related to staff members' perception that there have been ongoing changes in the unit improvement orientation; this index focuses on the prevention of errors and mistakes; includes staff perceptions that leaders try to prevent mistakes, errors, and budget inefficiencies, team formation is actively encouraged, and attempts are made to exceed the expectations of those we serve.	.77
Continuous Improvement: six items related to staff members' perception that there have been constant efforts to address unit improvement orientation; this index focuses on the units' continuous striving for improvement; continuous improvement includes staff perceptions that leaders are continuously raising performance standards, expectations of those served are exceeded, cost are reduced without any effect to service provided, and almost all staff members work in teams.	.76
Quality Philosophy	
Unit Philosophy: five items related to the way staff members in a particular unit fundamentally feel about quality improvement in their work environment; quality philosophy includes staff members' perceptions of their mission and purpose, willingness to change and improve, propensity to interact and share success stories, priorities relating to quality, and concerns for quality.	.81
Quality Climate	
Supportive Unit Climate: fifteen items that relate to the general atmosphere or mood within the work unit; unit climate focuses on how employees feel about their daily interactions with co-workers, leaders, and the work itself; it also refers to the sense of cooperation, teamwork, trust enjoyment and the feeling of being valued, accepted, and sought after for input into decision-making.	.95

Supportive Work Processes: thirteen items related to the key elements of improving the quality and design of basic day-to-day work processes; this index includes understanding and improving processes which are both problematic and problem-free; it focuses on process assessment, reduced work cycle time, efficiency, and effectiveness; it also examines the scope and effectiveness of process improvement.	.94

Quality Outcomes

Overall Unit Performance: four items related to the overall level of performance when compared to similar unit, expectations of those served, unit goals, and last year's performance at the same time.	.84
Rate of Improvement: four items related to the rate of improvement when compared to similar unit, expectations of those served, unit goals, and last year's performance at the same time.	.90
Number of Errors and Mistakes: four items related to the number of errors and mistakes when compared to similar unit, expectations of those served, unit goals, and last year's performance at the same time.	.89
Cost of Services: four items related to the cost of services when compared to similar unit, expectations of those served, unit goals, and last year's performance at the same time.	.87